

DOCKET NO: 245309US0X CONT

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF :  
MOTOKI NUMATA, ET AL. : ART UNIT: 1792  
SERIAL NO: 10/713,013 :  
FILED: NOVEMBER 17, 2003 : EXAMINER: R. KUNEMUND  
FOR: PROCESS OF PRODUCING :  
COMPOUNDS

REPLY BRIEF

COMMISSIONER FOR PATENTS  
ALEXANDRIA, VIRGINIA 22313

SIR:

In response to the Examiner's Answer mailed November 29, 2007, the Appellants respectfully ask for reversal of the rejections on appeal based on the arguments in the Appeal Brief and in this Reply Brief.

Response to Examiner's Arguments in Section (10) of the Examiner's Answer

The Examiner has not shown that:

- the prior art suggests a process providing a cake with no more than 10% cake attached liquids by using the internal energy released by movement of the cake into a low pressure recovery zone.
- the selection of the particular washing liquids and reaction media required by claims 27, 28 and 29 are results effective variables for providing a cake with no more than 10% cake attached liquid.

The Examiner asserts that the combination of Turner, et al. and Beard, et al. teaches the claimed invention. The Examiner admits “that the Turner et al reference does not teach the use of a flash or lowering of pressure to dry using the heat of the material too” (Examiner’s Answer, page 4, 2<sup>nd</sup> paragraph of section 10). While col. 13, lines 34 *ff.* of Turner mention “filtering the slurry” to produce a filter cake and transferring the cake to a low pressure zone for drying, there is no suggestion to employ only the internal heat of the sample to provide the degree of dryness required by claim 25. Turner, col. 14, line 21, mentions “flashing off” solvent as a means to initiate crystallization, but does not suggest use of such a process for providing a substantially dry product. Moreover, as claimed the Turner product is in solution (see claim 1) and the Turner examples do not describe using the internal energy of the crystal to dry itself. Col. 20, lines 29-31 of Turner contemplates use of a drier.

To supplement Turner, the Examiner relies on Beard for teaching the concept of drying by depressurization: “The Beard et al. reference does in fact teach a step where a cake is subjected to a depressurization step” (Examiner’s Answer, page 4, section 10, third paragraph).

The Examiner asserts that claim 25 does not exclude subsequent drying steps (section 10, second paragraph), however, this issue is not material to the degree of dryness required by step (C) of claim 25 which is 10% or less cake attached liquid. Claim 25 does not exclude subsequent drying, but it does require the particular degree of dryness set forth in step (C) and this degree of dryness is not disclosed or suggested by the prior art.

While Beard broadly refers to rapid depressurization, it does not describe a process which provides a cake with 10% or less cake attached liquid after step (C). At best, Beard only generally suggests that rapid depressurization can remove some residual liquid, gas and volatile substances, but is silent as to the degree of removal. Thus, neither Turner nor Beard

suggests or provides a reasonable expectation of success for the degree of dryness (no more than 10% cake attached liquid) required by independent claim 25.

The Examiner believes that rapid depressurization would have been expected to provide a dryer product: “one of ordinary skill in the art would expect depressurization to work” (Examiner’s Answer, page 5, line 8), but does not explain why it would have produced a product having the degree of dryness required by claim 25. Moreover, Beard is primarily directed to a pressure filtration device (see abstract and claims) and not to particular process parameters for achieving a particular degree of dryness.

Furthermore, neither Turner nor Beard suggest selecting either a washing liquid or reaction medium having an evaporation latent heat at the boiling point at atmospheric pressure of not more than 300 kcal/kg as required by claims 27 and 28, or the washing liquid required by claim 29. The Examiner regards these additional parameters in the dependent claims as being capable of routine optimization “in order to increase yields and efficiency” (Examiner’s Answer, page 5, last paragraph). However,

A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. *In re Antonie* 195 USPQ 6, (CCPA 1977) (MPEP 2144.05(b))

The Examiner’s Answer does not establish that the prior art recognized that selection of a washing liquid or a reaction medium having an evaporation latent heat at the boiling point at atmospheric pressure of not more than 300 kcal/kg was a results effective variable for providing a dry product--specifically a cake with no more than 10% cake attached liquid.

While the Examiner’s Answer broadly alleges that the limitations required by claims 27, 28 and 29 could be optimized to “increase yields and efficiency” it does not point out in the prior art where this is suggested either for generically increasing yields or efficiency, or specifically where the prior art suggests that selection of a reaction or washing medium

having the characteristics of those required by claims 27, 28 and 29 would provide a cake with no more than 10% cake attached liquids.

On the other hand, the experimental data of record shows that the claimed process that employs no new energy for drying (other than pressure and temperature generated in the reaction step) provides exactly the degree of dryness claimed--less than 10% cake attached liquid--as shown in each of Examples 1, 2 and 3. The claimed invention provides significant energy savings compared to conventional processes such as those depicted in the comparative example or by the Turner process. Neither Turner, nor Beard suggests or provides a reasonable expectation of success for these benefits.

RELIEF REQUESTED

The Appellants respectfully request reversal of the grounds of rejection above and the allowance of this application.

Respectfully submitted,

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